

# **Technical Memorandum**

## **Altamont Corridor Preliminary Project Description**



**California High-Speed Rail Authority**

**AECOM**

**April 27, 2009**

## Introduction

The California High-Speed Rail Authority (CHSRA) certified the Bay Area to Central Valley High-Speed Train (HST) Final Program Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) in July of 2008 and selected the Pacheco Pass route with San Francisco and San Jose termini for the HST system. In addition, the Authority decided to pursue developing a regional partnership that could pursue a joint-use infrastructure project in the Altamont Pass corridor as an independent project to satisfy a different purpose and need from the proposed HST system, but that would also accommodate HST service.

The voters of California passed Proposition 1A in November, 2008. Proposition 1A designates the Altamont Corridor as eligible for funding through High Speed Rail Bonds. The California High-Speed Train Business Plan from November 2008 states that, "...the California High-Speed Rail Authority is pursuing a joint-use ("Regional Rail" and high-speed train) infrastructure project in the Altamont Pass corridor".

The Altamont Corridor Partnership Working Group (ACPWG) was formed representing interested transportation agencies including The San Joaquin Council of Governments, the California Partnership for the San Joaquin Valley, The Tri Valley Policy Advisory Committee, the Alameda County Congestion Management Agency, the Metropolitan Transportation Commission, along with service providers including the Altamont Commuter Express, the Bay Area Rapid Transit District, the Capitol Corridor, and Caltrain.

The CHSRA, working in cooperation with the ACPWG, has prepared this technical memorandum to document their efforts to define a project description for an Altamont Corridor regional rail joint-use infrastructure project. This project description includes the general project location, the purpose and goals of the project, the planning context within which the project is being developed, and a description of the general location and anticipated design elements of the project.

## Summary Description

The Altamont Corridor Project would provide a regional rail connection between the San Francisco Bay Area and northern San Joaquin Valley via the Tri Valley area. The project would extend between San Jose to the west and Stockton to the east (see Exhibit 1). Between these end points, a broad corridor is shown; various alignment alternatives that generally follow this route along with stations located to serve market areas and provide transit connectivity will be identified and evaluated as part of future environmental review.

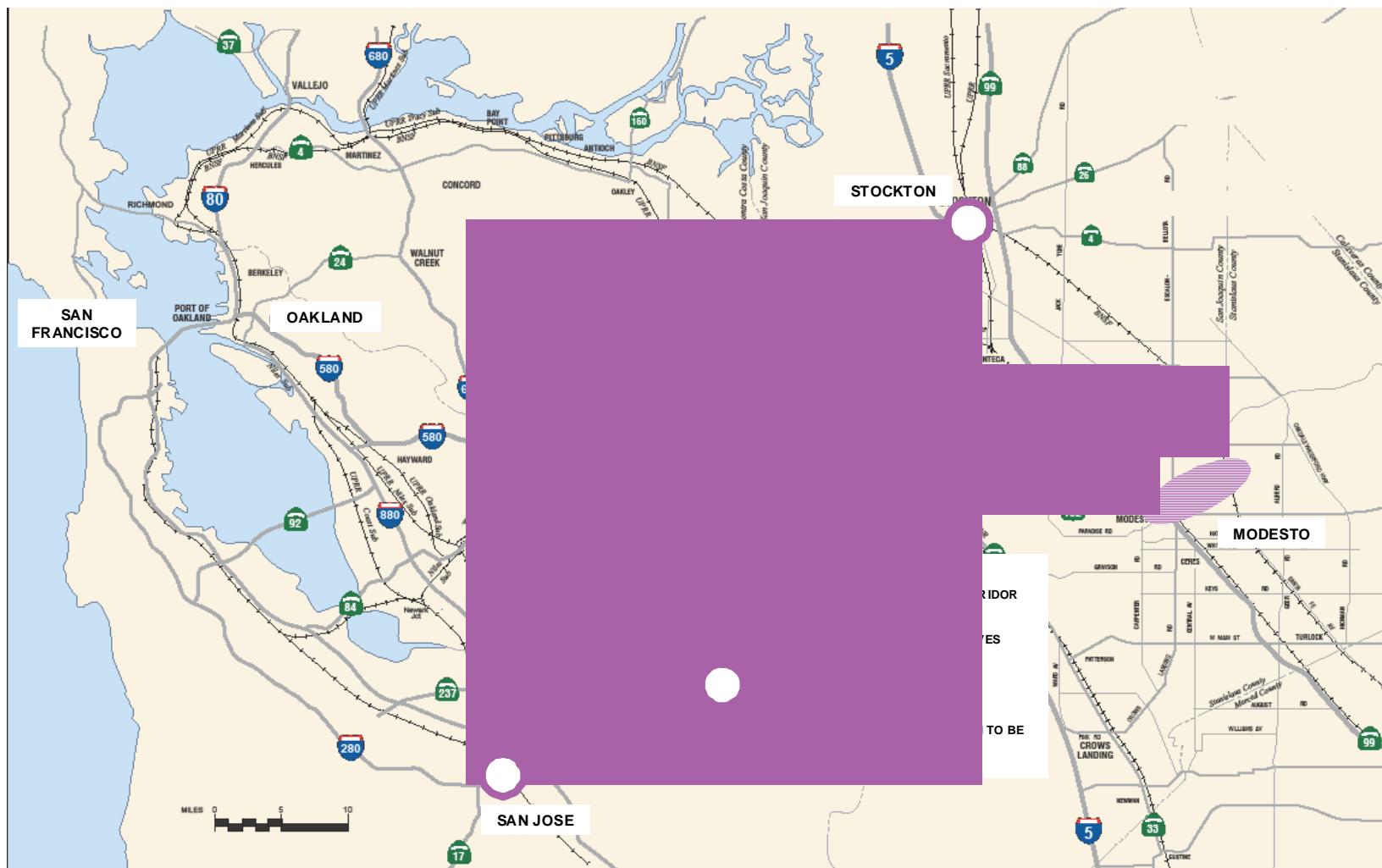
The Project will serve as an upgrade to regional rail services presently operated by the Altamont Commuter Express (ACE) between Stockton and San Jose. The project would include a branch east of Tracy which will connect to the north/south HST line in the Central Valley to allow operation of trains between the Inner Bay Area and Modesto as well as points beyond to the north and south including Sacramento.

The project is also being planned to accommodate intermodal connections to BART should it be extended in the Livermore vicinity and in the Fremont / Union City vicinity. Intermodal connections to BART would provide transit access to Oakland, Oakland Airport, San Francisco and the greater East Bay counties of Alameda and Contra Costa served by BART.

The project may also accommodate a future connection to the Dumbarton rail service in the Fremont/Union City vicinity as well as an intermodal connection to the Valley Transportation Authority (VTA) light rail network in Santa Clara County.

The project would be designed to be developed in phases which will be identified based on opportunities and funding potential. The phasing of the project will be analyzed and documented as part of environmental documentation to be prepared by CHSRA.

## Exhibit 1: Altamont Corridor Project Limits



Note: Delineation represents general corridor location; specific route alignments and stations subject to further study

## Project Purpose and Goals

The nine county Bay Area is home to nearly seven million people and supplies more than three million jobs. By 2050, the region's population is anticipated to grow by over 40 percent for a total of 10 million people. Population increases between the years 2000 and 2050 for some of the counties that could be served by improved rail service in the Altamont Corridor are anticipated to be 30 percent for Santa Clara County, 60 percent for Alameda County, and over 200 percent for San Joaquin County.

The greatest increase in travel growth into the Bay Area over the next few decades is anticipated to come from neighboring counties to the east. By 2030, in-commute into the Bay Area by commuters will rise by over 200 percent from the Sacramento Valley and by 112 percent from the San Joaquin Valley. Without stronger transit systems leading to the main Central Valley cities and connecting them to each other, there will be fewer opportunities for compact land planning as well as increases in commuting costs and travel times along with other negative environmental consequences.

The primary purpose of improving rail service in the Altamont Corridor is to improve travel time for intercity trips between the Bay Area and northern San Joaquin Valley and to provide greater transit connectivity to support more compact land use planning and development throughout the project area. This includes providing connectivity and accessibility to Oakland and Oakland International Airport which has been identified as a crucial objective by the Authority.

In summary, key project goals have been identified for the Altamont Corridor as both an interim regional rail improvement and a future long-term HST connection. These goals include:

- Providing a regional service in the Altamont corridor linking the northern San Joaquin Valley with the Bay Area
- Providing improvements in ACE service
- Providing connectivity and accessibility to Oakland and Oakland International Airport
- Connecting to northern California HST lines and accommodate compatible light weight train sets serving regional destinations
- Connecting to all regional rail lines and maximizing connection to other services
- Providing a separate dedicated line for regional rail passenger service
- Providing stations which maximize access to existing and planned population and employment centers

## Planning Context

CHSRA has developed a planned network for HST throughout the State of California. The network will link Northern and Southern California via the Central Valley. In conjunction with certification of the Bay Area to Central Valley High-Speed Train (HST) Program Environmental Impact Report / Environmental Impact Statement (EIR/EIS), CHSRA designated the Pacheco Pass via Gilroy as the preferred route to connect the main line of the HST network in the Central Valley with the Peninsula and the City of San

Francisco. Subsequently, CHSRA began to work with a regional partnership to develop a joint-use corridor through Altamont Pass which could potentially support operation of HST trains serving statewide destinations as well as regional trains operating in Northern California between the Bay Area and Central Valley via the Tri Valley area (refer to Exhibit 2 which shows HST lines in blue and the Altamont Corridor pink).

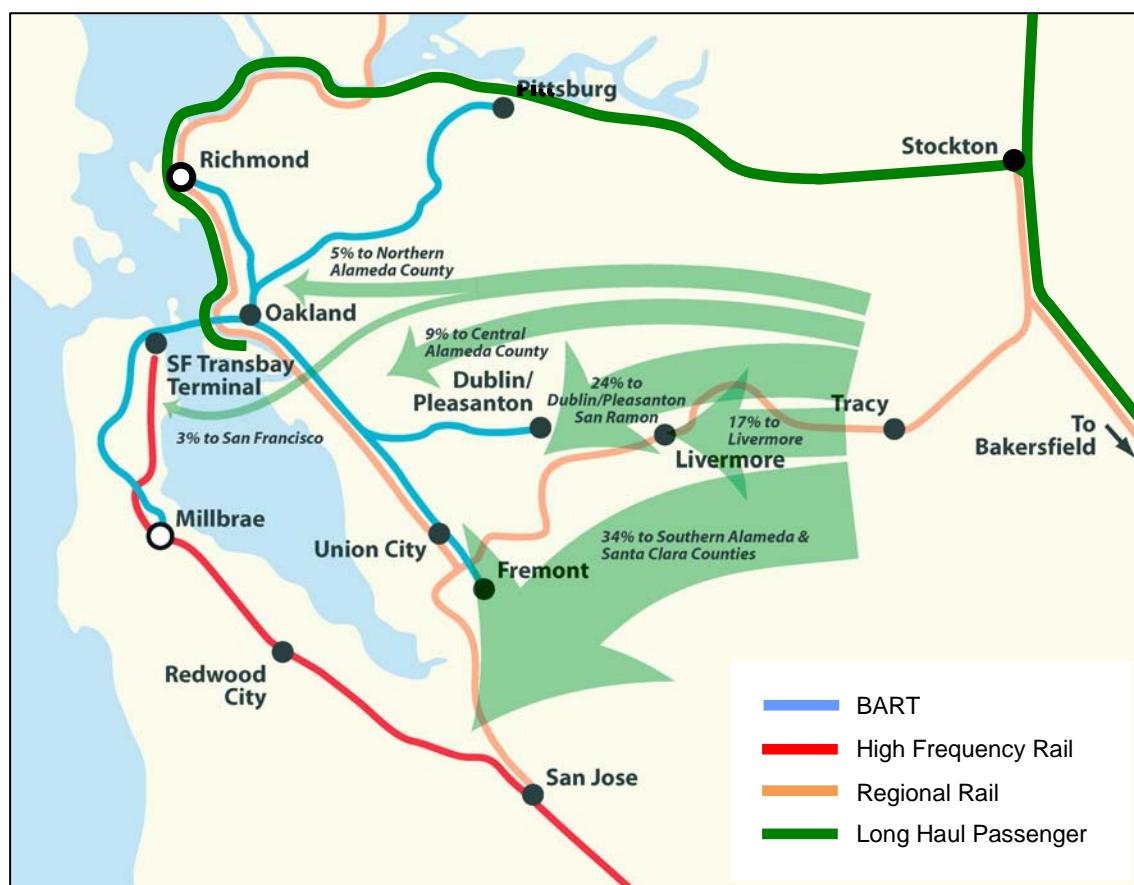
**Exhibit 2: Altamont Corridor and Statewide HST Mainlines**



## Interaction between Central Valley and Bay Area

The market for travel between the Sacramento and San Joaquin valleys and the Bay Area, and in particular between the Central Valley, Tri Valley and Silicon Valley, is rapidly growing (see Exhibit 3). The number of San Joaquin Valley residents commuting daily to jobs in the Bay Area is projected to more than double by 2030, to more than 60,000, while the number of Sacramento Valley residents commuting to Bay Area jobs is projected to more than triple, to nearly 50,000. At the same time, weekday delays experienced by drivers in Alameda County are projected to increase by 267 percent, and in Santa Clara County, by 133 percent. By 2020, more than two-fifths of commuters over the Altamont will be bound for jobs in the Tri Valley, and another one-third for Southern Alameda and Santa Clara counties. Already, the annual economic cost of congestion throughout the Bay Area has reached \$2.6 billion, and automobiles account for fully half of the region's greenhouse gas emissions.

**Exhibit 3: Year 2020 Trip Distribution: East of Altamont / Bay Area**



Source: BART I-580 Phase 1 Study, 2002

## Existing Highway Network

As shown on Exhibit 4, two freeways serve the eastern approach of Altamont Pass. Interstate 205 provides a direct route for travelers from the area north and east of Manteca. I-580 serves travelers coming from the south. From its junction with I-205, I-580 continues west over the Altamont Pass and through the Tri-Valley area. Beyond Dublin, I-580 continues through the Dublin Canyon to Hayward, where it turns north to reach Oakland. Between Hayward and Oakland, I-580 is paralleled by the Interstate 880 freeway several miles to the west. West of the Tri-Valley, Interstate 680 connects north to Contra Costa County and Highway 84/I-680 connects south to southern Alameda and Santa Clara counties.

## Highway Congestion and Future Improvement Potential

Highway congestion follows from the primary commute patterns between moderate-cost housing in the San Joaquin Valley, and job centers in the Tri-Valley and south Bay Area. The limited number of highway routes between the Central Valley and the Bay area, combined with the anticipated increase in future travel demand, particularly between the Sacramento and San Joaquin valleys, will result in a bottleneck situation for commuters.

As documented in the 2007 *San Francisco Bay Area Regional Rail Plan*, a 112 percent increase in peak direction commuter travel demand is anticipated between the San Joaquin Valley and the Bay Area between 2000 and 2030. Reverse commuters are anticipated to increase by over 50 percent over the same time period. No new general purpose travel lanes are planned for the main highways that serve this important gateway. Consequently, the average weekday daily vehicle hours of delay is anticipated to increase by 267 percent in Alameda County by 2030. Since further expansion of general use lanes on existing highways is not planned or cost feasible, high levels of future congestion are anticipated. The presence of high percentages of heavy trucks on both I-580 as well as I-205 further exacerbates congestion as trucks, especially on grades; utilize much higher roadway capacity compared to autos and light trucks.<sup>1</sup>

## Existing and Planned Regional Rail Network

The existing and planned regional rail network is illustrated on Exhibit 5. The Bay Area is served by BART, the Capitol Corridor, the San Joaquin, Caltrain and Altamont Commuter Express (ACE). BART provides frequent service connections between the Peninsula and the East Bay via the transbay tube as well as connection to cities in Contra Costa and Alameda Counties.

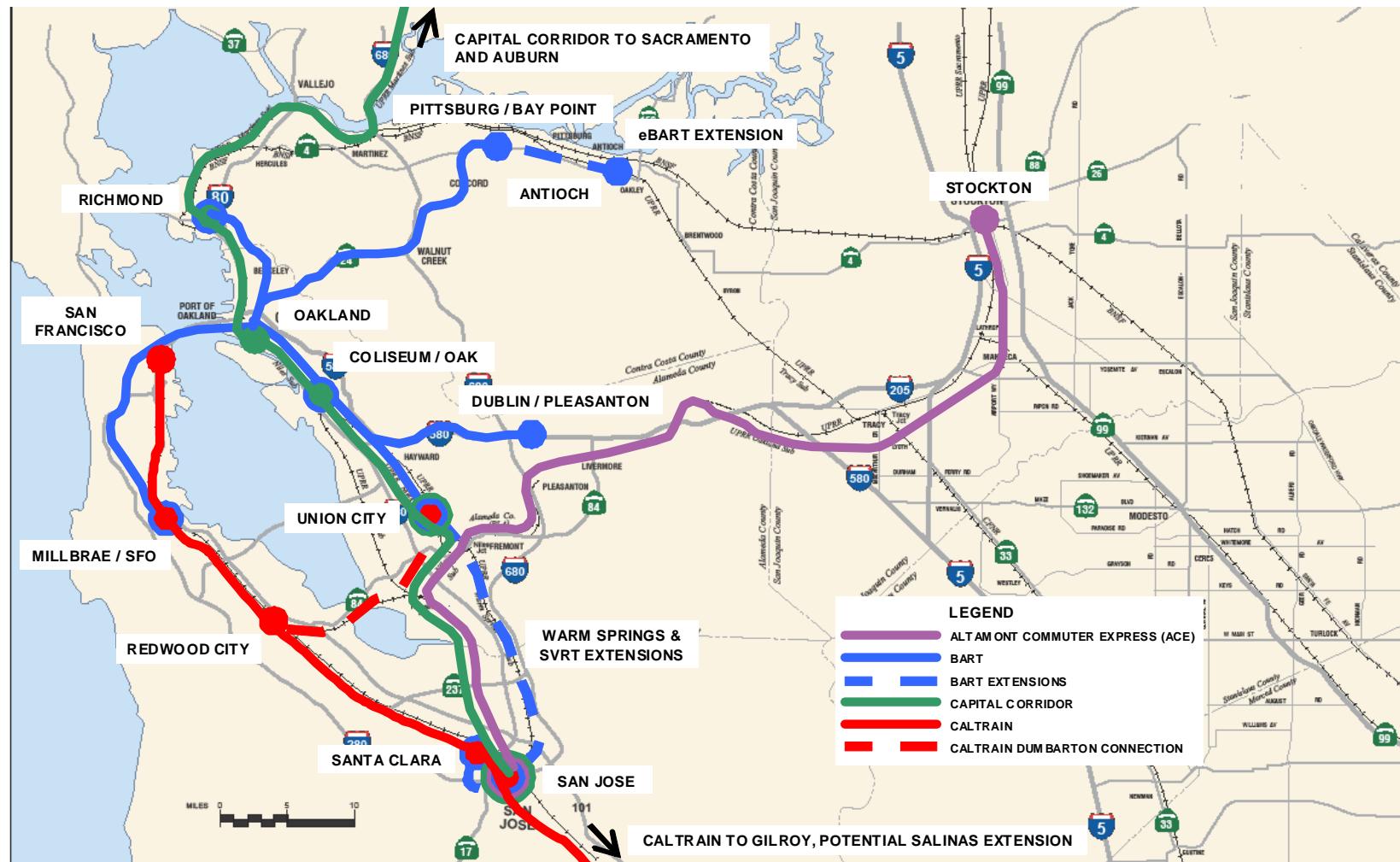
BART headways are 15 minutes off peak and 5 minutes peak for the SFO – Bay Point line and 15 minutes all day on the Dublin/Pleasanton – Daly City – Millbrae line. The Capitol Corridor, which is part of the Amtrak system, provides connection between cities along the East Bay, but also provides connection to the State capitol of Sacramento. The Capitol Corridor operates 32 trains per day, most operating between Sacramento and Oakland. The San Joaquin is also part of the Amtrak system. It operates 12 trains per day, most operating between San Francisco and Bakersfield. Caltrain provides connection between cities on the Peninsula and San Jose and continues south to Gilroy. Caltrain operates 98 trains per day, most operating between San Francisco and San Jose.

<sup>1</sup> I-205 at MacArthur Drive in Tracy had more than 11% trucks and more than 60% of these were 5+ axles; I-580 at the I-205 split had more than 12% trucks and more than 80% of these were 5+ axles per Caltrans 2007 data.

## Exhibit 4: Existing Highway Network



## Exhibit 5: Existing and Planned Regional Rail Network



### **Altamont Commuter Express (ACE) Central Valley to Bay Area Rail Service**

Current ACE operations connect cities in the Central Valley and Tri Valley with San Jose utilizing eight trains per day. Under current conditions, ACE runs four trains each in the AM and PM for commuters stopping at the following stations:

- Stockton
- Lathrop/Manteca
- Tracy
- Vasco
- Livermore
- Pleasanton
- Fremont
- Great America
- San Jose

Scheduled travel time between Stockton and San Jose is two hours and eight minutes in the AM and two hours and ten minutes in the PM. With only four trains in each direction per day and an average travel speed of approximately 37 miles per hour, the existing ACE service provides the best service possible due to the limitations of shared track with freight railroads. Nevertheless, ACE service frequency and speed needs to be upgraded in order to better service commuters and shape future development patterns.

### **Altamont Corridor Connectivity Potential**

The potential exists for the Altamont Corridor to provide vast improvements in connectivity between the Central Valley and the Bay Area. Improvement in regional rail service in the Altamont Corridor, combined with potential service extensions from other providers, could greatly increase connectivity as well as travel time between these two regions. Connectivity potential is illustrated on Exhibit 5.

BART is currently planning to extend service from Dublin/Pleasanton east to Livermore. If this extension is completed it would provide the opportunity for an interface between BART and regional rail in Livermore that would allow connection to the BART system in the East Bay including the cities of Oakland, Berkley, and Richmond. The CHSRA and BART have been planning for an intermodal connection between the Altamont Corridor Project and BART in the Livermore area.

Caltrain is currently conducting planning studies for a South Bay crossing utilizing the Dumbarton rail bridge between Redwood City and Union City. The project is in its final stage of environmental impact studies. The service will connect CalTrain, ACE, Capitol Corridor and BART. It also will connect with East Bay bus systems at a multimodal transit center in Union City. The CHSRA will continue to coordinate with CalTrain to ensure that this connection will occur so that regional rail service can provide a connection to the Peninsula in the future.

Since connections to Oakland and the Peninsula are in the planning stages by other transit providers, the goal for the Altamont Corridor would be to continue to provide connection to San Jose, just as ACE currently does. San Jose has one of the highest concentrations of employment in the region and many residents of the Central and Tri valleys commute to work in this city. Therefore, in the future, residents of Central and Tri Valley cities will have the potential for transit connections to major employment centers including those in the East Bay, South Bay, and on the Peninsula.

## Project Description

In accordance with the California High-Speed Train Business Plan dated November, 2008, the CHSRA is pursuing a joint-use ("Regional Rail" and high-speed train) infrastructure project in the Altamont Pass corridor (refer to Exhibit 1). The Altamont Corridor Project will provide an improved rail corridor between Stockton and San Jose to support passenger service between the Bay Area and northern San Joaquin Valley via the Tri Valley. As a joint-use project, investment in regional rail in the Altamont Corridor could provide a substantial upgrade to the ACE service.

The project will provide intermodal connections to BART in order to serve the Oakland Airport, the Cities of Oakland and San Francisco as well as other East Bay and South Bay locations. Intermodal connections to BART will be provided in the Livermore vicinity, should the Dublin/Pleasanton line be extended as well as in the Fremont/Union City vicinity either meeting the existing Fremont line or the Warm Springs / Silicon Valley extension.

The project may also accommodate a future connection to the Dumbarton rail service in the Fremont/Union City vicinity as well as an intermodal connection to the Valley Transportation Authority (VTA) light rail network in Santa Clara County.

Exhibit 6 delineates the project corridor and indicates the project termini, potential station locations, intermodal connections and illustrates how the Altamont Corridor Project would fit within the existing and planned regional rail network, using connectivity to leverage the regional benefits.

The project will include a branch east of Tracy which will connect to the north/south HST line in the Central Valley to allow operation of trains between the Inner Bay Area and Modesto as well as points beyond to the north and south including Sacramento. The project will be developed in phases that will be identified in the project level environmental document. A construction plan will be developed that will identify operable project segments or elements of the Regional Rail/HST infrastructure (such as grade separations) that could be constructed early and bring near term project benefits to existing rail freight and conventional passenger rail service.

Potential station locations would include Stockton, Tracy, Livermore, Pleasanton, Fremont/Union City, Milpitas, and San Jose. Multimodal opportunities would be pursued at stations in Stockton, Livermore, Fremont, and San Jose to connect with the HST mainline, BART, CalTrain, and VTA.

The project will accommodate feeder and connecting bus services providing access to proximate market areas and interfacing with regional bus links where appropriate.

Though the project description does not expressly include accommodation for freight movement, it is recognized that development of a new regional rail corridor crossing the Altamont Pass may facilitate goods movement initiatives in Northern California (e.g., removal of ACE trains from existing freight tracks may free up windows and make short haul freight more viable on the existing freight tracks).

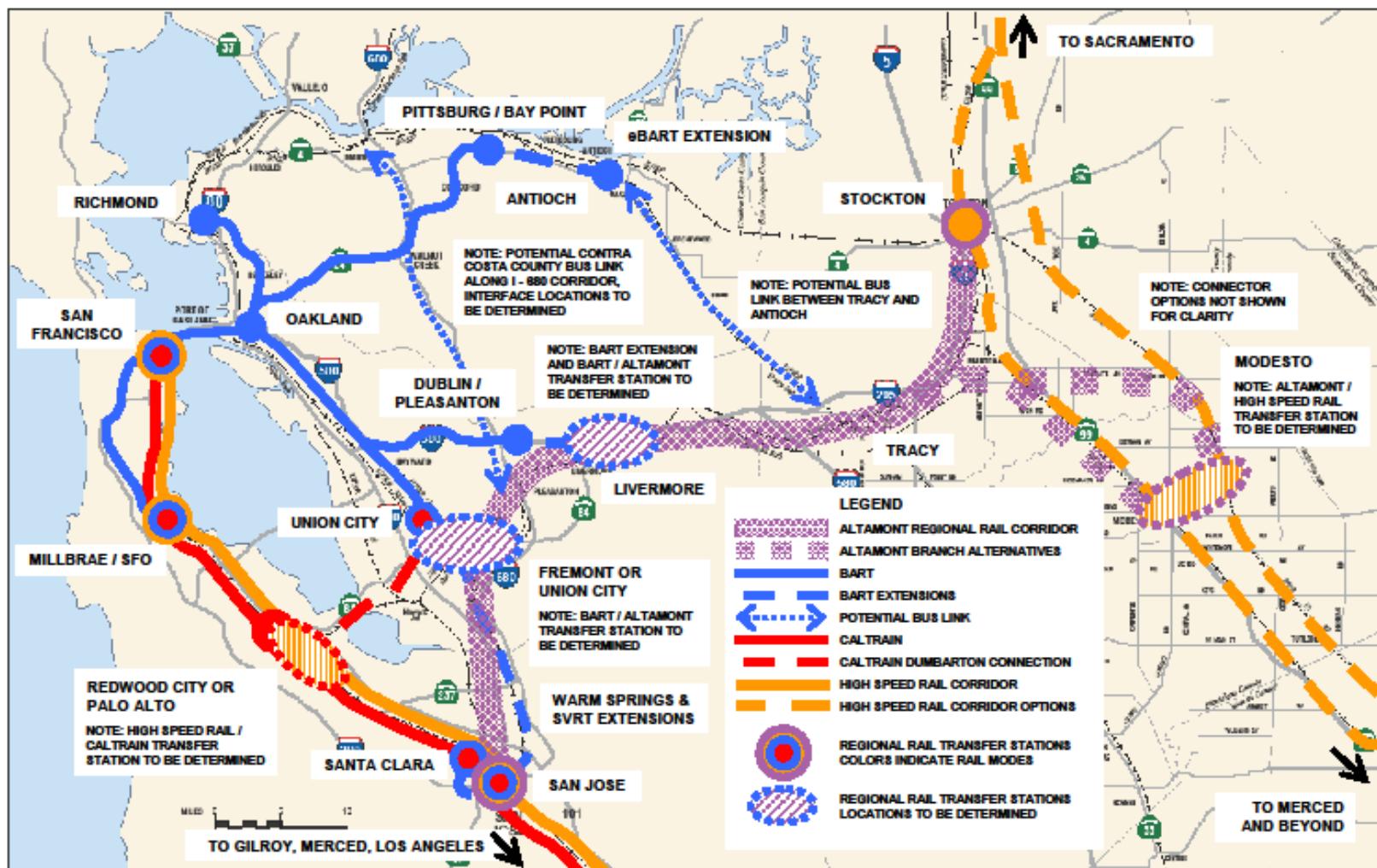
The project would be constructed in phases based on available opportunities. Phasing will include the identification of improvements that can be made within logical segments of the corridor as part of the environmental evaluation process.

Although specific phasing cannot be identified until the project alternatives are defined and evaluated, consideration will be given within the environmental clearance process to identifying “building blocks” both with regard to geographic segments as well as levels of investment (e.g., improved conventional service vs. high speed electrified service) which would be combined in a logical fashion to provide a corridor development plan. These studies will include evaluating western terminals in the Livermore area as well as the Fremont/Union City vicinity. The NEPA/CEQA document will identify a construction phasing plan and clearly spell out construction staging in addition to project phasing, and the environmental clearance will address the ultimate corridor-long project for the purpose of protecting right of way in concert with clearing near term improvements which could potentially be funded for construction in the early years of the corridor development program.

### **Design Criteria**

Design criteria for the Altamont Corridor will be compatible with those used for the HST statewide system – e.g., the ultimate alignment will be fully grade separated and electrified. The Altamont Corridor will have more stations spaced closer together than those for the statewide HST system and there would be reduced potential for express capabilities to the Bay Area. Nevertheless, the design criteria will provide for development of improved travel time throughout the corridor and the ability to operate existing ACE equipment in the near term.

## Exhibit 6: Altamont Corridor Project Connectivity



## Next Steps

Future evolution of the Altamont Corridor project will include the development and screening of specific alignment alternatives in conformance with the general project description. A series of alternative alignments will be developed that can satisfy the goals of the project as well as the necessary design criteria required for operation of the HST equipment in the future. As part of the environmental clearance phase the following initial steps will be taken:

- **Federal NEPA Lead Determination/Confirmation** – The federal lead agency, whether it be the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), or a combined FRA/FTA co-lead must be determined prior to the preliminary identification of alternatives for inclusion in analysis the EIS/EIR and prior to the formal start of the NEPA/CEQA process.
- **NEPA Cooperating Agency Identification** – The cooperating agencies, as defined by NEPA, should be considered prior to public scoping and the nature of their involvement with EIS preparation should be determined in consultation with the federal lead agency.
- **California Responsible Agency Identification** – The responsible agencies, as defined by CEQA, should be considered prior to public scoping and the nature of their involvement with EIR preparation should be determined in consultation with the Authority. The role of BART, other transit providers, and city and county agencies with EIR preparation should be determined.
- **404/NEPA Integration Considerations** – After the federal lead agency is determined, the need for a 404/NEPA integration process should be evaluated and, if necessary, expectations for the integration process should be identified with integration participating agencies (including federal lead, USFWS, USACE, USEPA, and NMFS), prior to the release of formal scoping notices. The applicability of the prior programmatic 404/NEPA integration process to the Altamont Corridor should be resolved.
- **Purpose and Need/Goals and Objectives** - A preliminary purpose and need (NEPA) / goals and objectives (CEQA) statement should be drafted and approved by the NEPA lead and the Authority for inclusion in the NEPA/CEQA scoping notices. The purpose and need analysis will consider analysis of travel demand, the need for goods movement, automobile competitive travel times, land use, origin and destination information, potential ridership, the relationship between regional bus and the project, and other pertinent transportation information that will be updated with the most recent available data.
- **Ridership Forecasting and Market Evaluation** – As part of the planning analysis to develop the Purpose and Need for the project, determination of the potential ridership levels and the market for transit in the study area will be conducted. Specific evaluations will include:
  - Transit and rail markets using forecasting methodologies that reflect regional as well as inter-regional trips.
  - Analysis of competitive travel times between existing and proposed rail services as well as competing modes such as bus and auto

- Ridership both with and without BART intermodal connections in Tri-Valley area as well as in Fremont/Union City vicinity; evaluate ridership both with and without potential BART wye connection south of Bay Fair in Hayward.
- **Notice of Intent/Notice of Preparation** –State and federal notices will need to be prepared to notify local, state, and federal agencies and the public that a project-specific EIR/EIS is being prepared, and to solicit comments or suggestions concerning alternatives and the social, economic, and environmental issues that need to be addressed. A CEQA Notice of Preparation (NOP) will be prepared and mailed to state and local elected officials and agencies, as well as interest groups and organizations already on the Authority's lists. The NOP will be made available to the public through local and county government agencies, as well as electronically through the Authority's Web site. Working with the NEPA lead, a NEPA Notice of Intent (NOI) will also be drafted for publication in the Federal Register. Notices will also be published in the San Jose Mercury News, Stockton Record, and the Oakland Tribune, among others, to advertise the scoping meetings and open houses.
- **Scoping Period** – The public, agencies, and stakeholders should be provided a minimum of 30-days (suggested duration of 60 days) during which comments can be submitted on the scope of the EIS/EIR, alternatives, and issues to be analyzed. [Note: no formal selection of alternatives to be analyzed in the EIS/EIR should be completed before consideration of all input from the scoping period.]
- **Scoping Meetings** – Scoping meetings will need to be scheduled and conducted to provide direct opportunities for public involvement during the scoping period. Open-house style scoping meetings are suggested, where tables staffed by technical and public outreach project team members are arranged around a room to describe various aspects of the proposed project and seek input. Due to the length of the alignment, several meetings in various locations (at least San Joaquin Valley, Tri-Valley, Fremont vicinity and San Jose vicinity) are suggested, during both daytime and evening hours. As appropriate, interpreters or bilingual staff should be available to assist in obtaining community input. All comments received will be documented and disseminated to the Authority, the federal lead agency and project team for integration, as appropriate, into the environmental work program. In addition to identification of traditional environmental topics to be considered as part of the EIS process, such as cultural and natural resources, other specific resources are likely to be identified as important elements for consideration including SB 375(growth Inducement), Energy, and AB 32 (Greenhouse Gases)
- **Define Alternatives** – Once all input has been gathered as part of the scoping period, a set of alternatives will be identified for screening and evaluation as part of the NEPA/CEQA environmental document. The alternatives will include all alternatives that have the potential to satisfy the project purpose and need whether they terminate with an intermodal connection to BART or another service provider or at a stand-alone station at another location. The alternatives will be analyzed utilizing the CHSRA Alternatives Analysis Methodology.

- **Subsequent NEPA/CEQA process** – The project-level environmental clearance process is expected to provide clearance for a near term regional rail improvement in conjunction with the overall Altamont Corridor Project. The general steps of the process that will be followed include:
- Draft EIS/EIR Preparation
  - Public Comment Period
  - Final EIS/EIR Preparation
  - Certification of Final EIR by CHSRA
  - Record of Decision by Federal Lead Agency